

**REMARKS**

Claims 1-66 are present in this application. Claims 1, 4, 32, and 45 are independent claims.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

**§ 103(a) Rejection – Nishimura, Kinoshita**

Claims 1-19, 23, 24, 29, 30, 32-38, 45-53, 60-62, 64, and 65 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over US 2004/0068655 (Nishimura) in view of US 2003/0007641 (Kinoshita; newly cited). Applicant respectfully traverses this rejection.

Independent claims 1 and 4 are directed to an AV data wireless communication system. Independent claims 32 and 45 recite “communication apparatus.” Using claim 1 as an example, the claims cover communication steps of the communication system, of:

when the first communication apparatus requests the second communication apparatus to transmit the communication key signal,

the second communication apparatus

generates two or more code signals based on the communication key signal of the second communication apparatus, and

transmits all of the code signals to the first communication apparatus using different transfer mediums, respectively, the different transfer mediums being as many as the code signals, and

the first communication apparatus

decodes the original communication key signal using all of the received code signals, and

establishes communication with the second communication apparatus.

It can be seen that the claimed “communication key signal” is for purposes of establishing communication between a first and a second communication apparatus. As disclosed in the present specification, the present invention is derived from a conventional communication system in which ID codes are set in the data transmitter and respective data receiver at the time of shipping (see top of page 7 of the present specification). The present invention seeks to remove the restriction of fixed ID codes so that more than one data receiver can be used with a data transmitter (see paragraph 0014 bridging pages 7-8 of the present specification). The present invention achieves the capability of removing the restriction of the number of receivers that can communicate with a data transmitter by ensuring that the data transfer is only between an AV data receiver permitted to receive AV data and an AV data transmitter (paragraph 0018).

In other words, in the present invention it is important to protect the security of the “communication key signal.” In Nishimura, control key  $K_c$  is not encrypted, but instead is periodically or non-periodically updated. In Kinoshita, the link key is not encrypted. Applicant submits that neither Nishimura nor Kinoshita disclose encryption of the key used to establish communication.

Nishimura’s control key  $K_c$  is used during initialization of communication. Despite this teaching, the Examiner alleges that digital data  $D$  of Nishimura teaches the claimed “communication key signal,” and  $Kw(D)$ ,  $Kc(Kw)$  constitute the two or more code signals. To the contrary digital data  $D$  is not used to encrypt/decrypt an AV data signal, as well as establish communication. Rather, Nishimura’s control key  $K_c$  is used during initial communication.

In particular, the work key  $K_w$  in Nishimura is not used to both encrypt/decrypt the data  $D$  and to establish communication. Instead, control key  $K_c$  is used in authentication (see Nishimura at Fig. 2). However, unlike the present invention, control key  $K_c$  is not decrypted in order to establish communication. Rather Nishimura discloses a communication system in which the control key is updated either periodically or non-periodically (see paras. 0027, 0160). Thus, the updating scheme of Nishimura may be considered as being comparable to the case of the hot-water supply device disclosed in the present specification (see specification at para. 0016).

Similar to the present invention’s “communication key” Kinoshita discloses a shared key in a communication apparatus that ensures security of the shared key (referred to as a “link key”)

by separately transmitting the key over a different transfer medium (e.g., infrared) than the ordinary data (see particularly para. 0049).

Kinoshita discloses generation of encryption/decryption key data from the link key for use in encrypting and decrypting data to be transmitted and received from a station 3 (see paras. 0046, 0047). Unlike the present invention, Kinoshita's link key is not encrypted. Thus, Kinoshita primarily teaches transmission of ordinary data and the link key over respective two communication mediums.

Thus, Applicant submits that digital data D, as the alleged communication key signal, is not for encrypting digital data, and control key Kc which is used in the initial communication steps of Nishimura, is not used to generate code signals and subsequently decoded by the code signals, as recited in the claims. Applicant submits that Kinoshita does not make up for this deficiency in Nishimura because the link key is not disclosed as being encrypted.

At least for these reasons, Applicant submits that Nishimura and Kinoshita, either alone or in combination, fail to disclose the claimed "communication key signal" and decoding of "the original communication key signal using all of the received code signals," in order to establish communication.

Furthermore, even provided that Nishimura and Kinoshita can be combined, which Applicant disagrees, the combination would still not result in the claimed invention. In particular, Applicant submits that Nishimura in combination with Kinoshita teaches a transfer medium by which key signals are transferred and a second transfer medium by which data is transferred.

Claim 1, for example, requires transmission of two or more code signals based on the communication key over different transfer mediums. As shown in Fig. 1 of the present application, two codes are 1) the encrypted ID code, and 2) the key to decrypt the encrypted ID code. In the embodiment of Fig. 1, the key to decrypt the encrypted ID code is transmitted over the same transfer medium as the encrypted AV data (i.e., wireless radio frequency transmission).

In particular, Kinoshita discloses an arrangement where data and a link key are transferred by different transfer medium. Kinoshita discloses a benefit that the secrecy of the medium by which a link key is transferred is not affected by the data security function of the

medium by which data is transferred. This arrangement helps secure satisfactory secrecy with respect to the link key.

In Nishimura, a plurality of key signals (Kc, L, Kc(Kw)) are transferred, and the plurality of key signals are transferred over a single transfer medium. Furthermore, the control key Kc can be updated, and the identifier L is updated whenever the control key Kc is updated. A benefit of the arrangement of Nishimura is that the control key Kc can be updated regularly or irregularly, which helps to obtain higher security. Furthermore, updating of the identifier L makes it possible to check whether or not the control key Kc is updated based on the identifier L. Thus, the arrangement in Nishimura makes it easy to check whether or not the control key Kc is updated during an interruption of transfer. Accordingly, operations of new authentication and exchange of keys need to be performed only when they are necessary, which helps reduce the load on the system.

In summary, the combination of Nishimura and Kinoshita provides benefits of security in transmission of key signals in the first transfer medium (Kinoshita) and a lower load on the system resulting from re-authentication following an interruption of transfer, only as necessary (Nishimura).

In contrast, according to the present invention, “a plurality of key signals are transferred by a plurality of transfer mediums.” The arrangement in the present invention makes it possible to freely build a wireless communication system by limiting communication of AV data to between a transmitter and a receiver that can communicate using all of the plurality of transfer mediums, and simultaneously to prevent random communication, and thereby prevent infringements of copyrights of AV source authors.

Therefore, Applicant submits that Nishimura and Kinoshita, either alone or together, fail to disclose the claimed “a plurality of key signals are transferred by a plurality of transfer mediums.”

For the above reasons, Applicant submits that Nishimura and Kinoshita fail to teach each and every claimed element as recited in claims 1, 4, 32, and 45, as well as respective dependent claims.

Furthermore, claim 8 recites “when the first communication apparatus decodes the communication key signal based on the first code signal and the second code signal, the first communication apparatus changes the time information by a predetermined time then decodes the communication key signal using the time information.” Applicant submits that Nishimura and Kinoshita fail to teach at least this claimed feature.

Therefore, Applicant submits that the rejection fails to establish *prima facie* obviousness. Applicant requests that the rejection be reconsidered and withdrawn.

**§ 103(a) rejections – Nishimura, Takeda**

Claims 20-22, 31, 39, 40, 54, 55, 63, and 66 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Nishimura and Kinoshita, further in view of US 2003/0182579 (Leporini).

Claims 25, 26, 41, 42, 56 and 57 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Nishimura in view of U.S. Patent No. 6,512,767 to (Takeda).

Claims 27, 28, 43, 44, 58, and 59 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Nishimura, Kinoshita, Takeda, further in view of Leporini.

Claims 20-22, 25-28, 31, 39, 40-44, 54-59, 63, and 66 are dependent claims. Applicant submits that at least for the reasons above, the rejection fails to establish *prima facie* obviousness. Therefore, Applicant requests that the rejection be reconsidered and withdrawn.

In addition, Applicant submits that Takeda fails to make up for the deficiency in Nishimura of failing to teach the claimed different transfer mediums, wherein the different transfer mediums are for the two or more code signals.

Rather, Takeda discloses a transmission medium connection device used to connect one type of transmission medium to another type of transmission medium. The present invention, on the other hand, uses a plurality of transfer mediums to transmit, or receive, the two or more data signals.

Claim 27

The Office Action alleges that data transfer means 44 of Fig. 9 of Nishimura teaches the claimed electronic device. (e.g., in the rejection of claim 17). Then, with respect to claim 27, which recites that the electronic device is a remote controller, the Office Action relies on teachings in secondary references to Takeda and Leporini. In the rejection of claim 27, the Office Action appears to rely on Leporini for teaching a capability of receiving inputs from an infer-red remote control. The Office Action does not address the claimed requirement that the electronic device is a remote controller.

"If the proposed modification or combination of the prior art would change the principal of operation of the prior art invention being modified, then the teaching of the references are not sufficient to render the claims *prima facie* obvious." *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

Based on the feature recited in claim 27, the Office Action's allegation that the data transfer means 44 is the claimed electronic device and that Leporini teaches a remote control would require replacement of Nishimura's data transfer device 44 be replaced by a remote controller of Leporini. Replacement of Nishimura's data transfer means with a remote controller would involve a change in the principal feature of the embodiment, which requires transfer over a single IEEE 1394 bus.

For at least this reason, Applicant submits that the rejection fails to establish *prima facie* obviousness for claim 27. Applicant requests that the rejection of at least claim 27 be reconsidered and withdrawn.

Conclusion

In view of the above remarks, it is believed that claims are allowable.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Robert Downs Reg. No. 48,222 at

the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

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